GB1250163

Title:
GB1250163

Abstract:

1,250,163. Loose-leaf binders. ALPA STEEL & PLASTIC Ltd. 12 June, 1969 [12 March, 1968], No. 12098/68. Heading B6E. A loose-leaf binder comprises an integral plastics moulding formed by a base 2, Fig. 1, and articulated by a resilient spine 3 to a compactor bar 1 which is provided with a number of aligned bosses 4 interspersed with locking holes 6, which in the closed position of the loose-leaf binder co- operate with studs 5 on the base 2, the holes 5 having wedge shaped, downwardly inwardly directed side walls 9 which are engaged by diametrically opposed, parallel undercut grooves (11) Fig. 5 (not shown) to lock the binder in position. The base 2 is also provided with bosses 4 which press almost against each other to locate and guide the loose-leaves e.g. cheques in the binder. The studs may be provided with different heads which co-operate with complementarily shaped locking apertures.

PATENT SPECIFICATION (11) 1 250 163

DRAWINGS ATTACHED

1 250 163

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(54) DEVICE FOR BINDING LOOSE LEAVES

(71) We, ALPA STEEL & PLASTIC LIMITED, formerly ALPA PLASTICS LIMITED, a Company organised under the laws of Great Britain, of 240-254 Maybank Road, London E.18 do hereby declare the invention for which we pray that a Patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to a device for binding loose leaves which are provided with location holes. Such leaves are in common use at the present time and the location holes are sometimes used to locate the leaf in printing or scanning apparatus. Thus, such a leaf may be a bank cheque with a counterfoil stub or a statement and the present invention is intended to take advantage of the punched holes in leaves which may or may not be provided with a line of perforations to enable part of the leaf to be off.

According to the present invention a device for binding loose leaves provided with location holes comprises a base having two or more upwardly projecting studs on which leaves can be located by their location holes and at least one retainer flexibly attached to the base and which is attachable to the upper ends of one or more of the studs to retain the leaves in position thereon the upper end of each stud having a neck of reduced cross-section to provide a head portion above it and the retainer being provided with an elongated opening which is shaped to allow the retainer to engage beneath the stud head when moved in a direction normal thereto after being passed through the opening.

Thus, when the leaves are positioned on the studs the retainer is simply dropped over the stud heads and moved sideways in which position it will be locked against movement off the studs and will act to retain the leaves in position.

In a preferred arrangement one end of each elongated opening is larger than the other narrower end which engages beneath the stud head when the retainer is moved in a direction normal to the stud.

With this arrangement each hole may be substantially key-hole shaped and the large end of the hole may be arranged to merge gradually into the narrower end.

The walls of the narrower part of the hole are preferably inclined and co-operate with inclined portions on the studs when the retainer is in its operative position. This inclination of the walls enables a close sliding fit to be obtained without unduly weakening the neck of the stud.

The walls of the hole may be inclined as desired but they are preferably inclined outwardly in an upwardly direction and at an inclined angle of approximately 30°.

In any case, the neck may be formed on each stud by a pair of diametrically disposed grooves parallel with the inclined walls of the narrower part of the hole.

Preferably the retainer engages beneath the stud head when it is moved in a direction towards the edge of the leaves adjacent the location holes.

In one convenient arrangement one retainer is provided which extends between two or more spaced studs which it engages and in an alternative arrangement two or more spaced retainers can be provided each retainer engaging two or more spaced studs.

A cover may be provided to protect the leaves when held in position and if desired the device may be built into the cover itself.

The device may be made from any suitable material and it is particularly adaptable to a construction in which the re-

[*Price 25p*]

tainer and the base and the studs are made from a plastics material, for example, by a single moulding.

When a moulding of this kind is used it may comprise, two spaced bars, one of which is provided with studs and forms the base, the bars being interconnected by a thin diaphragm portion which allows the other bar to be bent over to engage the studs on the base and thus act as a retainer.

If desired the base and/or the retainer can be provided with upstanding bosses which act to locate further holes when provided in the leaves and such bosses may be provided on both base and retainer and be arranged to almost meet when the retainer is in position so that the leaves are compressed as they are moved into position and thus requiring additional effort to undo the device when the sliding action is required to make the fastening.

The invention may be performed in many ways and some embodiments will now be described by way of example and with reference to the accompanying drawings in which:—

Figure 1 is a part sectional side elevation of a device according to the invention,

Figure 2 is a plan view of the construction shown in Figure 1,

Figure 3 is a cross-sectional view on the line III-III of Figure 2,

Figure 4 is a detail plan view of part of the arrangement shown in Figure 1,

Figure 5 is a series of sections taken on the lines *5a*, *5b*, and *5d* of Figure 4,

Figures 6, 7 and 8 show alternative constructions,

In the first construction to be described and as shown in Figures 1, 2 and 3 of the drawings the device is intended to hold the counterfoils of bank cheques, the counterfoil and cheque proper together forming a leaf provided with a line of perforations enabling the cheque to be torn from the counterfoil when required. The device thus enables a number of such leaves to be made up into a cheque book which can be carried by the user, the device taking advantage of punched holes in the counterfoils which can also be used to locate the leaf in the printing mechanism used in the bank for encoding. It will be appreciated that such a cheque book will save a considearble amount of labour in the bank as, it is easier to overprint loose leaves to apply the owners personal marking which can later be inspected by the scanning mechanism when the cheque is returned to the bank than to overprint cheques in bound form.

The device for holding the leaves comprises a moulding of plastics material such as polypropeylene or nylon. The moulding comprises a pair of spaced bars, 1, 2 each bar being about 3 inches long and half an inch wide. The bars are about .05 inches thick and are joined by a diaphragm portion 3 which is about .015 inches thick and is also about ½ inch wide.

The upper surface of each bar 1, 2 is provided along its longitudinal centre line with four spaced bosses 4 which rise about .05 inches above the surface of the bar and are of approximately 1/16″ radius. The bosses 4 are diplaced so that they can engage four of the holes in the cheque counterfoil which carries six punched holes across its end. The bar 2 is also provided with a pair of upwardly projecting studs 5 which are arranged in line with the row of bosses 4 so that there are two bosses between them. The bar 2 which carries the studs will be referred to herein as the base. The other bar 1, which will be referred to herein as the retainer has a pair of key-hole shaped elongated openings 6 the arrangement being such that the openings have two bosses 4 between them. The openings 6 are arranged transversely to the length of the retainer 1 and are shaped so that the large end 7 of the opening merges gradually into the narrow part and the merging portion, as shown most clearly in Figure 4, and the narrow portion 8 is provided with walls 9 which are inclined outwardly with an increasing angle from the vertical along the length of the opening in the direction away from the large end 7, this varying angle being shown in the cross-sections in Figure 5 and the included angle at the end of the narrow portion 8 being 30°.

The upper end 10 of each of the studs is provided with a pair of diametrically disposed grooves 11, the lower wall 12 of each groove being substantially horizontal and the other wall 13 being inclined to it, so that a head 14 is produced above the neck so formed by the grooves, the head having inclined lower sides. The parallel grooves 11 are substantially parallel with the walls 9 of the openings 6 and the openings 6 are arranged so that when the retainer 1 is folded over onto the studs 5 with the diaphragm portion 3 acting as a flexible hinge as shown in broken lines in Figure 1, it can be dropped over the heads 14 of the studs 5 and when drawn backwards the inclined walls 9 of the openings 6 sliding in the grooves 11 beneath the heads 14. As the direction of movement to lock the retainer 1 in position is that of the natural release direction

of the flexible hinge the retainer will remain where it is placed.

Each of the studs 5 is about .125 inches high, the head 14 being about .055 inches deep and this will enable a sufficient number of cheque counterfoils to be retained.

When the device is being loaded with leaves 15, indicated in broken lines in Figure 1, and after a sufficient number have been place in position the bosses 4 on the retainer 1 will cause the leaves to be pushed somewhat lower than is necessary until complete engagement with the studs 5 takes place and this ensures that the key-hole shaped openings 6 can engage the studs 5 without unnecessary friction. Moreover, the bosses will almost engage one another in the holes in the leaves when the retainer 1 is in position and they will thus also act to locate and assist in retaining the leaves. The inclined walls 9 and 13 of the parallel grooves and the openings 6 will act with a wedge effect to lock the retainer 1 in position.

If required a raised portion (not shown) may be provided on the upper surface of the retainer 1 to act as a thumb pusher to assist in releasing the device when it is time to release the unused cheques and the counterfoils or stubs of those cheques already used.

In an alternative arrangement (not shown) two separate retainers 1 could be used each locating on one or more studs 5 and in arrangements in which large sheets were to be held this might be advantageous.

The device can be moulded or fastened into a cover (not shown) which will protect the leaves in use and such a cover could, of course, also be made from a plastics material.

In Figure 6 an alternative stud construction is shown. In this arrangement the sides 16 of the elongated openings 6 in the retainer 1 are not inclined but a recess 17 is provided so that the head 18 on the tud 5 does not project or only slightly so if it is curved as shown in Figure 6. It will be appreciated that in this construction the grooves 11 do not have tapered sides but are merely channel-shaped.

The construction shown in Figure 7 is similar to that shown in Figure 6 but the recess 17 is not provided and in Figure 8 an arrangement is shown in which the retainer 1 is again provided with key-hole shaped openings 6 but in this case the tapered walls 19 are angled in the opposite direction to that described with reference to Figures 1 and 2. The stud head 20 again projects and provides abutment edges 21 to the grooves 11 which once again have tapered walls.

WHAT WE CLAIM IS:—

1. A device for binding loose leaves provided with location holes and comprising a base having two or more upwardly projecting studs on which leaves can be located by their location holes and a retainer flexibly attached to the base and which is attachable to the upper ends of one or more of the studs to retain the leaves in position thereon the upper end of each stud having a neck of reduced cross-section to provide a head portion above it and the retainer being provided with an elongated opening which is shaped to allow the retainer to engage beneath the stud head when moved in a direction normal thereto after being passed through the opening.

2. A device as claimed in Claim 2 in which one end of each elongated opening is larger than the other narrower end which engages beneath the stud head when the retainer is moved in a direction normal to the stud.

3. A device as claimed in Claim 2 in which the larger end of the hole is arranged to merge gradually into the narrower end.

4. A device as claimed in Claim 2 or Claim 3 in which each hole is substantially key-hole shaped.

5. A device as claimed in Claim 2, Claim 3, or Claim 4 in which the walls of the narrow part of the hole are inclined and co-operate with inclined portions on the studs when the retainer is in its operative position.

6. A device as claimed in Claim 5 in which the walls of the hole are inclined outwardly in an upward direction and at an inclined angle of approximately 30°.

7. A device as claimed in Claim 5 or Claim 6 in which the neck is formed on each stud by a pair of diametrically disposed grooves parallel with the inclined walls of the narrower part of the hole.

8. A device as claimed in any one of the preceding claims in which the retainer engages beneath the stud head when it is moved in a direction towards the edge of the leaves adjacent the location holes.

9. A device as claimed in any one of the preceding claims in which two or more spaced retainers can be provided each retainer engaging two or more spaced studs.

10. A device as claimed in any one of the preceding claims in which a cover is provided to protect the leaves when held in position.

11. A device as claimed in Claim 10 in which the base is formed as part of the cover.

12. A device as claimed in any one of

the preceding claims in which the retainer and the base and the studs are made from a plastics material.

13. A device as claimed in Claim 12 formed as a moulding comprising, two spaced bars, one of which is provided with studs and forms the base, the bars being interconnected by a thin diaphragm portion which allows the other bar to be bent over to engage the studs on the base and thus act as a retainer.

14. A device as claimed in any one of the preceding claims in which the base and/or the retainer are provided with upstanding bosses which act to locate further holes when provided in the leaves.

15. A device as claimed in Claim 14 in which bosses are provided on both base and retainer and are arranged to almost meet when the retainer is in position.

16. A device for binding loose leaves substantially as described herein with reference to and as shown in Figures 1,2,3,4 and 5, and Figures 6,7 or 8 of the accompanying drawings.

17. A cheque book comprising a number of cheques and counterfoils which form leaves which are bound together in a device as set forth in any one of the preceding claims.

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1250163 COMPLETE SPECIFICATION
3 SHEETS This drawing is a reproduction of the Original on a reduced scale
Sheet 1

FIG. 1.

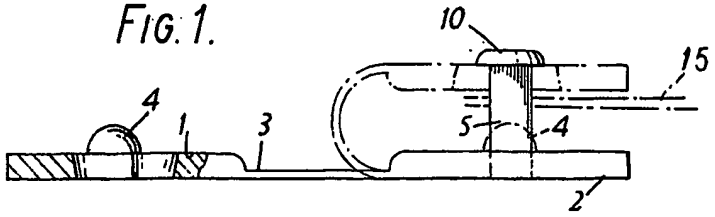

FIG. 2.

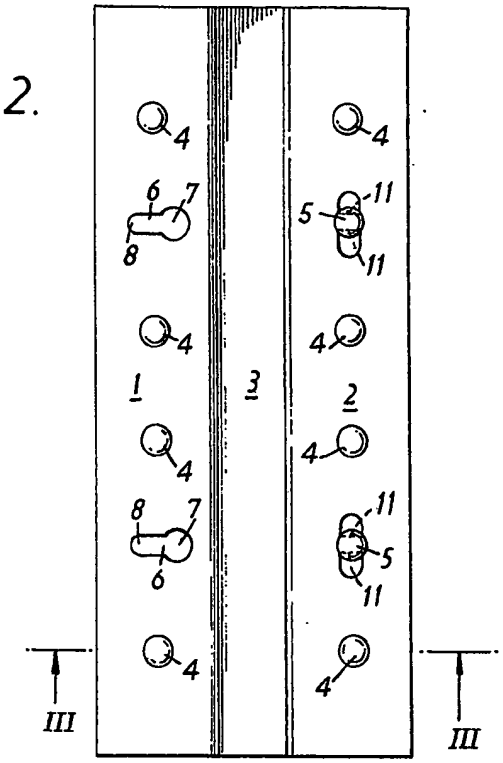

FIG. 3.

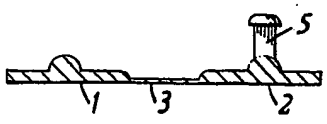

FIG. 4.

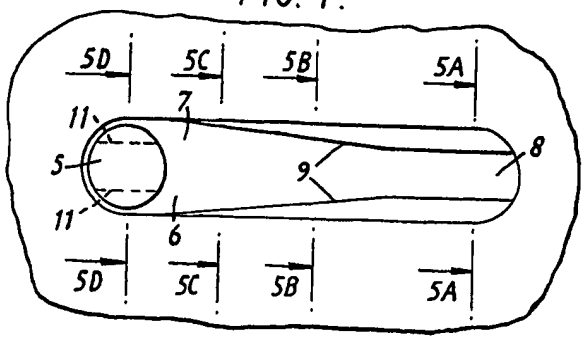

FIG. 5.

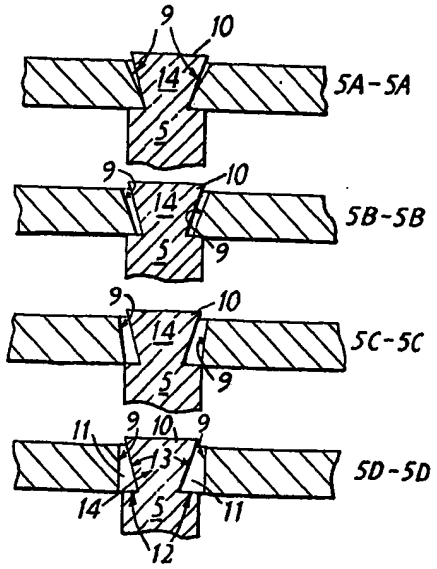

FIG. 6.

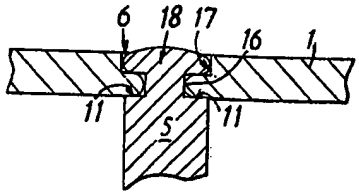

FIG. 7.

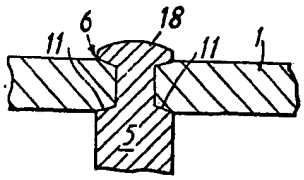

FIG. 8.